

Oak Ridge Institute for Science and Education (ORISE)

Ten-Year Site Plan

May 2005

The **Oak Ridge Institute for Science and Education** (ORISE) is a U.S. Department of Energy facility focusing on scientific initiatives to research health risks from occupational hazards, assess environmental cleanup, respond to radiation medical emergencies, support national security and emergency preparedness, and educate the next generation of scientists. ORISE is managed by Oak Ridge Associated Universities.

This document describes activities performed under contract number DE-AC05-00OR22750 between the U.S. Department of Energy and Oak Ridge Associated Universities (ORAU).

Executive Summary

As of May 2005, ORISE continues on schedule with a multi-year site consolidation and facilities modernization plan. In FY2001, ORISE operated six different sites within the City of Oak Ridge. Completion in May 2005 of Building SC-200 construction at the ORISE South Campus will allow ORISE to vacate Building 1916T2 and the Warehouse Road Site. A portion of the ORISE space in 1916T2 has already been occupied by ORO and the remainder of the building will be transferred before the end of FY2005. Also, ORISE is currently finalizing all activities required for DOE/ORO to transfer the 59,800 gsf Vance Road Building to the private sector in June 2005. By the end of FY2005, ORISE will have consolidated its Oak Ridge operations into four sites – three are DOE-owned and one is owned by Oak Ridge Associated Universities (ORAU).

In FY2006, following a large interior reconfiguration project in Building SC-1, ORISE will vacate all but one small building at the Laboratory Road Site. This site will be completely vacated by the end of FY2008. Finally, efforts are currently underway to administratively transfer ownership of the South Illinois Avenue Site from DOE to the Department of Commerce National Oceanic and Atmospheric Administration (NOAA). Completion of these two actions will reduce the number of ORISE Oak Ridge sites to only two.

As part of the consolidation effort, ORISE also continues to excess and demolish low-quality underutilized buildings at the South Campus Site. ORISE received funding to demolish Building SC-2 (952 gsf) in FY2005 and, provided funding is forthcoming, will demolish Building SC-5 (5,641 gsf) in FY2006. Building SC-26 (12,800 gsf) is scheduled for demolition in FY2007, but may be demolished sooner, depending on funding availability. By the end of FY2008, ORISE expects to have reduced the number and square footage of its DOE-owned buildings in Oak Ridge from the current 21 buildings and 252,965 gsf to 8 buildings and 96,214 gsf, all located at the South Campus Site. At this time, the average age of the ORISE facilities will have been reduced from 54 years to 42 years and the facility RPV reduced by more than 53% from \$36,855,125 to \$17,080,970.

Site Summary

ORISE occupies and operates 25 buildings (379,480 gsf) located on five DOE-owned sites and one site owned by ORAU spread across a seven mile radius within the City of Oak Ridge, Tennessee. In addition, ORISE also utilizes office and laboratory/research space located at other facilities on the Oak Ridge Reservation, as well as leased office space in other parts of the country. See the section entitled “Leasing” (Page 6) for additional details regarding leased space.

Table 1. ORISE Land Area	
Site	Acreage
South Campus	223.0
Laboratory Road	3.8
S. Illinois Avenue	11.0
Vance Road	3.5
Total	241.3
* Warehouse Rd. Site managed by DOE/ORO	

Of the Oak Ridge facilities, 21 are DOE-owned, totaling 252,965 gsf of space. Seventeen of the DOE-owned buildings are active, totaling 173,772 gsf, and 4 buildings are classified as excess facilities, totaling 79,193 gsf. Four buildings owned by ORAU, totaling 126,515 gsf, and a no-cost leased building space (9,004 gsf) also support the ORISE Oak Ridge operations. See Table 2, below for more information on the ORISE DOE-owned facilities.

ORISE manages approximately 241 acres of DOE-owned land within the City of Oak Ridge. As of April 2005, 463 full-time ORISE employees were located in the Oak Ridge facilities.

Table 2. ORISE DOE-Owned Facilities (May 2005)				
Building	Built	Area (gsf)	FIMS	RPV
Active Facilities				
ATDD Main Building	1943	10,443	ORISE	\$2,245,245
ATDD Wind Tunnel Building	1977	4,250	ORISE	\$276,250
ATDD Mobile Office	1985	2,016	ORISE	\$49,080
ATDD Storage Building	1945	864	ORISE	\$43,200
2714G	1944	20,384	ORISE	\$4,028,830
2715	1944	3,413	ORISE	\$784,990
2715A (trailer)	1980	1,680	ORISE	\$33,600
SC-1	1939	46,808	ORISE	\$9,361,600
SC-4	1966	3,596	ORISE	\$359,600
SC-9	1962	1,405	ORISE	\$140,500
SC-10	1961	10,041	ORISE	\$2,510,250
SC-13	1966	4,537	ORISE	\$453,700
SC-15	1975	3,435	ORISE	\$343,500
SC-16	1982	1,931	ORISE	\$193,100
SC-100	2003	5,574	ORISE	\$1,282,020
SC-200	2005	22,020	ORISE	\$1,950,000
1916T2 & Storage Sheds	1946	31,375	DOE/ORO	N/A
Total - Active Facilities		173,772		\$24,055,465
Excess Facilities				
SC-2	1964	952	ORISE	\$147,560
SC-5	1960	5,641	ORISE	\$564,100
SC-26	1961	12,800	ORISE	\$128,000
Vance Road Building	1944	59,800	ORISE	\$11,960,000
Total - Excess Facilities		79,193		\$12,799,660
Total - All Facilities		252,965		\$36,855,125

ORISE Mission

A Summary of the ORISE mission is as follows:

- Building public trust and confidence in DOE's management of nuclear workforce health issues and environmental cleanup activities.
- Sustaining DOE's national and international leadership in emergency medical response to radiation incidents and in counter-terrorism operational readiness.
- Educating DOE's next generation of scientists and technical leaders.

Currently, ORISE expects no significant changes in its mission as stated above. However, ORISE expects continued growth, to varying degrees, in each of these core areas over the foreseeable future.

Additional information regarding the ORISE business programs and capabilities can be found on the ORISE Home Page, <http://www.ornl.gov/orise.htm>.

Land Use Plans and Land Management Issues

In September 2001, in conjunction with DOE/ORO and others, ORISE participated in a space management review of all of the DOE-owned facilities that are located within the city limits of Oak Ridge to determine their most efficient and effective utilization. As part of this review, ORISE demonstrated the many benefits of consolidating its Oak Ridge operations from six sites to three sites - the South Campus and South Illinois Avenue sites (DOE-owned) and the ORAU Main Campus (ORAU-owned). This vision would allow ORISE to (1) vacate the Vance Road Building, allowing its eventual transfer to the private sector, (2) vacate the ORISE occupied section of Building 1916T2, making it available for DOE/ORO's exclusive use, and (3) vacate the three ORISE Laboratory Road buildings, similarly making them available for DOE/ORO's exclusive use. Since that time, ORISE has made significant progress towards this end. Appendix 1 and Appendix 2 provide graphical detail of the ORISE Facilities Consolidation and Modernization Plan.

In FY2002, ORISE demolished the excess building SC-14 (5,028 gsf) and began construction of Building SC-100, a 5,574 gsf office building to house the Facilities and Transportation Department (FTD) administrative staff. During the same year, ORAU and DOE/ORO agreed for ORAU to construct a new 55,000+ gsf ORAU-owned facility at the ORAU Main Campus. This new building was planned to house the ORISE central computer center and most of the office staff vacated from the Vance Road Building, the Laboratory Road buildings, and Building 1916T2. Also in FY2002, ORISE completed construction of a 5,756 gsf laboratory addition to Building SC-10 and occupied this space with the ORISE Beryllium Laboratory Program, which relocated from the Vance Road Building. Finally, in FY2002, the ORISE Radiological Safety, Assessments, and Training (RSAT) Laboratory moved from Building SC-1 to Building SC-10 to consolidate wet chemistry and analytical operations in a single building.

In FY2003, ORISE completed construction of Building SC-100 and occupied it with the FTD administrative staff, previously located in Building 1916T2. Also in FY2003, ORISE began architectural and engineering design work to demolish Building SC-3, a 15,990 gsf warehouse, which was determined to be structurally unsound, and to construct Building SC-200, a new 22,020 gsf warehouse, in its place. This would allow the ORISE warehouse, shipping and receiving area, excess property storage, records storage, mail services, maintenance shop, and locksmith operations to relocate from Building 1916T2 to the South Campus Site.

In FY2004, ORISE demolished Building SC-3 and began construction on Building SC-200. Also during this year, construction work was completed on the new ORAU-owned office building and, in May and June, relocated more than 130 ORISE staff, the central computer center, and the Limited Security Area (LSA) into the new building. After completing two small office reconfiguration projects, ORISE relocated the remaining staff from the Vance Road Building and most of the Environment, Safety, and Health (ESH) Department staff from Building 1916T2 to Building SC-1. These moves resulted in vacating the Vance Road Building, Building 2715 (although still used intermittently for training), and the F-wing of Building 2714. In June 2004, ORISE transferred the Building 2714 F-wing and a portion of the G-wing to DOE/ORO for its use. ORISE also made a large portion of the previously occupied 1916T2 building available for DOE/ORO use.

In April 2005, ORISE completed a retrofit construction project in the portion of Building SC-1 that houses the ESH laboratories. In May 2005, ORISE will complete construction of Building SC-200. Completion of these two projects allows all remaining ORISE staff and operations to relocate out of Building 1916T2. ORISE will also complete engineering design work and begin retrofit construction to reconfigure a portion of Building SC-1 to house the Professional Training Program (PTP), the only remaining ORISE program located at the Laboratory Road Site. Design and construction work in Building SC-1 is expected require approximately 10 months, with May 2006 being the target completion date. Finally, in FY2005, ORISE completed the radiological survey and cleanup of the Vance Road Building, preparing it for DOE/ORO transfer to the private sector by June 30, 2005.

In FY2006, ORISE will complete retrofit construction work in Building SC-1 and relocate the PTP staff and operations to this building. This move will complete consolidation of the ORISE operations into three sites and mark the end of all major consolidation and modernization efforts proposed during the FY2001 Oak Ridge site review. ORISE has also proposed a new 5,000+ gsf office building for the South Campus Site. Architectural and engineering design for this planned project is scheduled to begin in FY2006 and construction will be completed in FY2007.

ORISE is currently in the conceptual planning stage for a large site improvement project at the South Campus Site. This project will encompass road, walkway, area drainage, utility system, and exterior lighting improvements. Funding for this project will be requested in FY2007 and FY2008.

ORISE will also continue to manage the South Illinois Avenue facility. This facility (4 buildings, 17,573 gsf) currently houses the ATDD/NOAA operations under a 50-year permit agreement between DOE and the Department of Commerce. However, efforts are currently underway at ORO to administratively transfer ownership of this site to NOAA. This action will further reduce the DOE footprint inside the City of Oak Ridge.

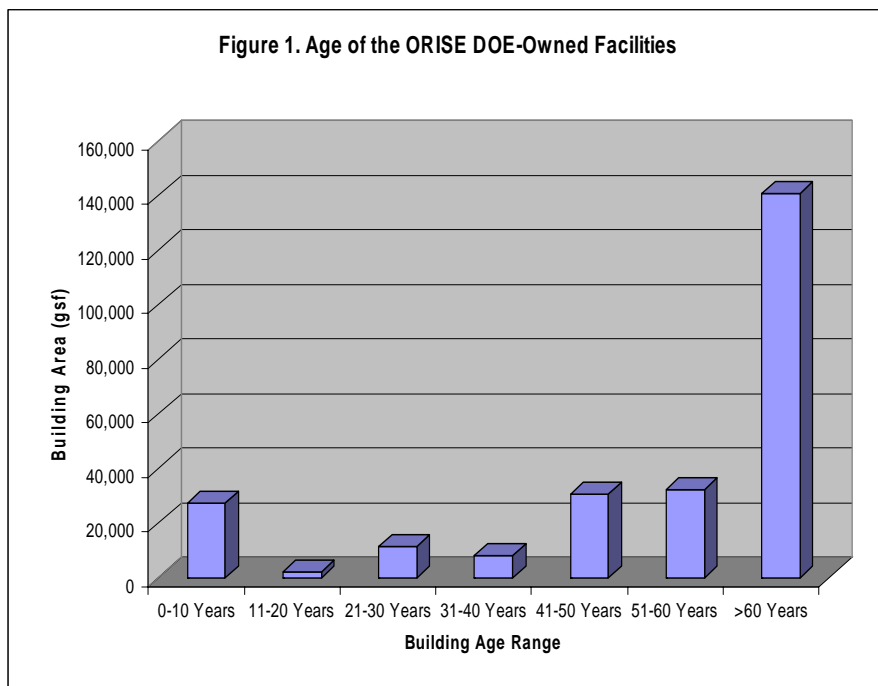
As part of the consolidation efforts, ORISE will also continue to excess and demolish low-quality underutilized buildings at the South Campus Site. By the end of FY2008, ORISE expects to reduce the number and square footage of its DOE-owned buildings in Oak Ridge from the current 21 buildings and 252,965 gsf to 8 buildings and 96,214 gsf, all located at the

South Campus Site. This will occur through a combination of demolition and/or transfer of facilities back to DOE or to the private sector. The average age of the ORISE facilities at that time will be reduced from 54 years to 42 years. Also, the facility RPV will be reduced by more than 53% from \$36,855,125 to \$17,080,970.

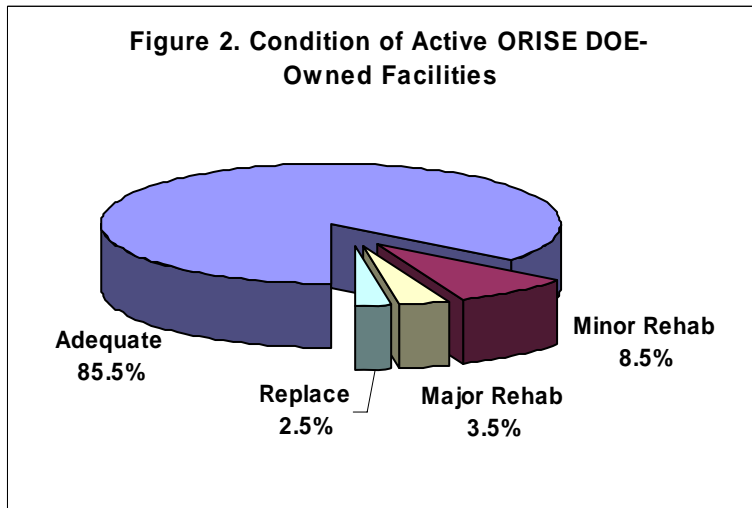
Facility Condition and Condition Assessment Process

As can be seen in Figure 1, most of the DOE-owned space occupied by ORISE was constructed during the World War II era.

Because of this, many of these buildings have required extensive maintenance, major system improvements (e.g., HVAC, electrical, computer network, telecommunications), and interior space reconfiguration to efficiently meet changing program operational requirements and to ensure worker health, safety, and security.



Since 1993, ORISE has been highly successful in obtaining General Plant Project (GPP) funding through the DOE/HQ landlord office to implement these and other facility



improvements. ORISE has also utilized In-House Energy Management (IHEM) and program expense sources to fund these activities as well as ORAU Corporation funds to improve building energy efficiency and reduce facility operating and maintenance costs. Currently, 85.5% of the active ORISE DOE-owned space is considered to be adequate to meet program needs with only 3.5% needing major rehabilitation and 2.5%

needing replacement. See Figure 2 for a graphical representation of the condition of the active ORISE facilities.

ORISE engineering and maintenance personnel conduct an annual informal condition assessment survey of all buildings and grounds to identify and document needed maintenance repair projects. Also, in a somewhat continuous process, maintenance repair tasks are identified by other means: routine management walk-throughs, maintenance employee and customer observations, program requests, etc. In addition to the above, and in accordance with DOE O 430.1B, Real Property Asset Management (RPAM), ORISE conducts more formal condition assessments of its facilities. The next formal assessment is currently scheduled for FY2006.

Space Management & Utilization

Over the years, the need for research, laboratory, and animal care space at ORISE has diminished and given way to the need for additional office space, which is currently the dominate space use type. ORISE has been proactive and efficient in adapting existing facility space to meet changing needs as well as improving overall building usage efficiency. As a result of these efforts, ORISE has eliminated commercially leased space within the City of Oak Ridge. See Table 3, below for additional information regarding space usage type at ORISE.

Table 3. Space Type - ORISE Active Facilities						
		Space Usage Type (gsf)				
	Area (gsf)	Office	Labs	Classroom	Storage	Misc.
Active DOE-Owned Facilities	173,772	66,247	27,215	8,986	58,253	13,071
ORAU-Owned Facilities	126,515	60,027	0	7,124	4,748	54,616
Total - All Facilities	300,287	126,274	27,215	16,110	63,001	67,687

Leasing

ORISE occupies all or a portion of four ORAU-owned office buildings within the City of Oak Ridge. These buildings are provided to ORISE under a use-fee arrangement with DOE. The ORISE central computer center and limited security area (LSA) are located in the newest of these buildings. In addition to the ORAU-owned buildings, the ORISE REAC/TS program occupies 9,004 gsf in the Oak Ridge Methodist Medical Center under a 20-year no-cost use permit arrangement between the medical center and DOE. Several other ORISE Oak Ridge employees are co-located in three buildings at the Oak Ridge National Laboratory (ORNL). Finally, ORISE employees are situated in leased or co-located space in Washington, D.C.; Arvada, Colorado; Aberdeen, MD; Fredericksburg, VA; and Davis, WV.

Disposition and Long Term Stewardship of Excess Facilities

Four facilities are listed as excess in the ORISE FIMS database: SC-2, SC-5, SC-26, and the Vance Road Building. Three of these facilities, SC-2, SC-5, and SC-26, are located at the

South Campus Site. The remaining facility, the Vance Road Building, is located in the Oak Ridge center city area and is surrounded by the Oak Ridge Methodist Medical Center. Approximately \$11K annually is required in maintenance and surveillance expenditures to keep SC-2 and SC-5 in a stable state. However, these costs are expected to increase, with occasional expenditure spikes, if maintenance and surveillance requirements continue for an extended period. Approximately \$75K annually is required to maintain the Vance Road Building in a stable state. Building SC-26, because of its structural type and location, requires only minimal maintenance and surveillance funding. While, management plans exist for the disposition of all of these facilities, long term stewardship is not considered an issue at ORISE. There are no plans to vacate the South Campus Site within the foreseeable future.

All but two of the twelve buildings located at the South Campus Site were formerly operated by the University of Tennessee Comparative Animal Research Laboratory (UT-CARL), as an agriculture experiment station. The facilities, along with some 223 acres of surrounding land, were assigned to ORISE in 1981. Radionuclides were used extensively at UT-CARL and buildings SC-2 and SC-5 were both contaminated during the experimental research work. In addition to radionuclide contamination, Building SC-2 also contains asbestos and may contain lead-based paint.

Building SC-2 (952 gsf) is the most extensively contaminated building at ORISE. This building functioned as the UT-CARL Isotope Laboratory to fabricate sealed sources for animal irradiation and to prepare radioactive doses administered for various animal metabolic studies. The radionuclides used in SC-2 include Sr-90, C-14, H-3, Eu-152, Eu-154, Am-241, Co-60, Cs-137, and Cd-109. In addition to the interior structure itself, the SC-2 fume hood filtering system is likely to be contaminated as is the network of building drain piping. ORISE has received funding for deactivating and demolishing SC-2, which will be completed prior to the end of FY2005.

Building SC-5 (5,641 gsf), the UT-CARL Large Animal Containment Facility, contains animal holding cells, a laboratory fume hood, a walk-in freezer, and a HEPA filtration system that is contaminated with Am-241. Funding for deactivating and demolishing Building SC-5 is anticipated to be forthcoming in FY2006.

Building SC-26 (12,800 gsf) is a wooden three-sided pole barn with a concrete floor and metal roof. It was used by UT-CARL to house and feed cattle. There are no known environmental issues with this facility. It is estimated that \$50K is required to demolish this facility. A CX and other documentation for the future demolition of SC-26 were completed in FY2005. Also, in FY2005, ORISE will submit a funding request to demolish this facility.

The Vance Road Building (59,800 gsf) was constructed in 1944 as a medical hospital to serve the residents of Oak Ridge. Since that time, the building has been converted to house various animal and medical research projects, along with the ORISE central computer center and office support functions. Radioisotopes were used in many of the research projects. In July 2004, all employees and ORISE operations remaining in this building were relocated to more efficient facilities. In August 2004, all remaining furniture, property, and equipment

items were removed. A plan to provide a clean parcel determination allowing DOE/ORO to transfer this property to the private sector was developed and approved in 2002. Radiation surveys necessary for transferring this facility are currently 100% complete and a final report will be completed by end of May 2005. To date, all survey and decontamination activities at this facility have been funded through the ORISE overhead. As part of the preparation for property transfer, a land survey has been completed and a CERCLA 120(h) review is being performed by an independent contractor. Documentation for the transfer of the Vance Road Building is expected to be complete by the end of June 2005.

Facilities Sustainment Program and Management of Deferred Maintenance (DM)

ORISE manages a number of processes to ensure its facilities are sustained in a suitable condition to efficiently and effectively carry out program missions now and in the future. These include:

- Identification of maintenance repair projects through a combination of formal and informal facility condition assessment surveys.
- Identification and management of capital infrastructure improvement projects.
- Management of corrective maintenance and preventive maintenance (PM) programs.
- DM project management – identification, backlog tracking, reporting.
- Maintenance and capital project budget management – includes management of ORISE maintenance investment index (MII) requirements.

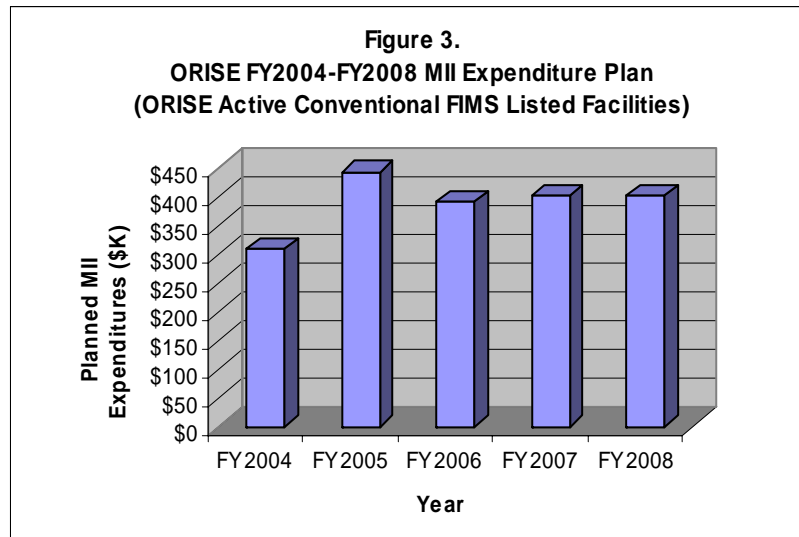
As stated above, ORISE utilizes a combination of formal and informal facility condition assessment surveys to identify and document repair maintenance projects. All maintenance projects are reviewed for immediate “do-it-now” or normal priority need. Immediate need projects are either completed by an ORISE maintenance mechanic on-the-spot or (for projects of two or more hours duration) planned and the information logged directly into the ORISE work order system. Immediate need projects are then integrated into the maintenance work plan for high priority processing.

Normal priority maintenance projects may either be planned and the data inserted into the work order system or, for lower priority projects, logged into a maintenance backlog database. Lower priority maintenance projects are reviewed and re-prioritized at frequent intervals. Projects ready for work are then planned and moved into the work order system for processing. During periodic reviews of the maintenance backlog database, DM projects are identified and marked as such in the database. All projects deferred or otherwise, are tracked from the time they are identified until completed. Database reporting software allows the development of a variety of reports based on the query of one or more data parameters. A number of standard reports have been developed, such as those that track the DM backlog.

In addition to the corrective maintenance program, ORISE manages an outstanding PM program. For this purpose, ORISE has developed a PM Database application that automatically schedules PM regimens for very nearly every individually maintainable equipment item at ORISE, including building envelope subsystems. Most of the ORISE

building related equipment items have monthly PM task assignments, while many others have weekly PMs – all scheduled automatically by the PM Database. For a period of more than 11 years, ORISE has completed 100% of its scheduled PM tasks within 30 days of the scheduled completion date. During this period, ORISE has experienced significantly reduced equipment repair costs, fewer maintenance call-outs, and little or no significant seasonal weather-related losses to its facilities. The strong commitment to this program has enabled ORISE employees to work productively by keeping building systems in excellent condition and equipment failures to an absolute minimum.

ORISE ensures that facility maintenance is adequately funded by budgeting for and tracking all expense and capital maintenance related expenditures. As a part of this process, ORISE reports maintenance expenditures quarterly and measures them against prescribed MII requirements. The annual expenditures in maintenance will decrease in FY 2006 due to transfer of buildings 2714G and 2715A to DOE, which will substantially decrease ORISE's RPV.



ORISE also maintains a database of capital infrastructure improvement projects. Capital projects may be identified in much the same way as that for maintenance repair projects. More frequently, however, capital infrastructure improvement projects are developed after a review and discussion of current and future program mission needs. Each capital project is evaluated against an infrastructure project scoring matrix and assigned an overall score. Prioritization is further evaluated and established in concert with DOE/ORO and the ORISE landlord office. Most ORISE capital projects are direct funded through the landlord office. ORAU-owned building capital infrastructure improvement projects are funded by the ORAU Corporation. As with maintenance repair projects, capital infrastructure improvement projects are implemented in a prioritized fashion as funding becomes available.

Summary of Resource Needs

See Appendix 3 for the ORISE Ten-Year Funding Plan (IFI Crosscut Budget).

ORISE Contacts

Rac Cox (865)-576-3010, coxr@orau.gov

Eddy Whitson (865)-576-3380, eddy.whitson@orau.org

ORISE Facilities Consolidation and Modernization Plan



Appendix 2 ORISE South Campus Facility Modernization Plan FY 2001 - FY 2006

